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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,058	10/27/2005	Ken Mashitani	070591-0032	2719

20277 7590 07/15/2009
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EXAMINER	
KIM, HEE-YONG	
ART UNIT	PAPER NUMBER
4192	
MAIL DATE	DELIVERY MODE
07/15/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/534,058	MASHITANI ET AL.	
	Examiner	Art Unit	
	HEE-YONG KIM	4192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☒ Claim(s) *6* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/6/05 10/27/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claim 6 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only, and/or, cannot depend from any other multiple dependent claim. See MPEP § 608.01(n).

For the purpose of examining the claim, it is assumed that claim 6 is dependent on claim 5.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-4, 6 and 7 are rejected under 35 U.S.C. 101 because the claimed invention does not fall within at least one of the four categories of patent eligible subject matter recited in 35 U.S.C. 101 (process, machine, manufacture, or composition of matter). Specifically, the claimed inventions are to provide information regarding depth or thickness of objects in the image and camera setup. They are neither tied to the statutory class (machine or manufacture), nor there is a transformation.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 7 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Tomoaki (Japan Patent 2002-095018).

Regarding claim 7, Tomoaki discloses Image Display Controller, Image Display System and Method for Displaying Image Data. Specifically Tomoaki discloses the camera setting information (90 in figure 13d, paragraph 86) which is equivalent to *information indicating a cross location of optical axes, focal distance information, and field angle information,* and the stereo setting information (91 in figure 13d, paragraph 86) which is equivalent to *at least one photographing time information out of information indicating the intervals between viewpoints, information indicating an angle formed of adjoining viewpoints and an object to be photographed*.

Regarding claim 11, Tomoaki further discloses camera selections (72a and 72b) *(selecting said two images).*

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toru (Japan patent 2000-078611) in view of Mitchell (US patent 6,049,341), hereafter referenced as Toru and Mitchell respectively.

Regarding claim 1, Toru discloses Stereoscopic Video Image Receiver and stereoscopic Video Image System. Specifically Toru discloses *providing stereoscopic vision-use information* (additional information coding (103) in figure 1 and depth value in paragraph 13) *useful for converting the data of said two-dimensional image into a stereoscopic vision-use image together with the data of said two-dimensional image* (2-D Image Encoding in Figure 1). However Toru fails to disclose *thickness information of an object on said two-dimensional image*. However the examiner maintains that it was well known in the art to provide *thickness information of an object on said two-dimensional image* as taught by Mitchell.

In the similar field of view Mitchell discloses Edge Cycle Collision Detection in Graphics Environment. Specifically Mitchell discloses edge cycles in the summary of invention which is equivalent to *thickness* because it include all the vertices information in the bird eye view of image and the thickness can be computed as a difference between near and far sides of vertices.

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Toru by providing *thickness*, as taught by Mitchell, for the purpose of detecting a collision.

Regarding claim 2, Toru discloses *depth* information (additional information coding, 103 in figure 1 and depth value in paragraph 13) *indicating a near side position*

of an object on said two-dimensional image together with the data of said two-dimensional image (2-D Image Coding in Figure 1). However Toru fails to disclose *depth information indicating a far side position of the object on said two-dimensional image*. However the examiner maintains that it was well known in the art to provide *depth information indicating a far side position of the object on said two-dimensional image* as taught by Mitchell.

Mitchell discloses edge cycles in the summary of invention which is equivalent to both *near and far side positions of the objects*. Therefore it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Toru by providing *information indicating a far side position of the object on said two-dimensional image*, as taught by Mitchell, for the purpose of detecting a collision.

Regarding claim 3, Toru discloses *providing stereoscopic vision-use information* (additional information coding, 103 in figure 1 and depth value in paragraph 13) *useful for converting the data of said two-dimensional image into a stereoscopic vision-use image together with the data of said two-dimensional image* (2-D Image Coding in Figure 1). However Toru fails to disclose *thickness information of each dot on said two-dimensional image*. However the examiner maintains that it was well known in the art to provide *thickness information of each dot on said two-dimensional image* as taught by Mitchell.

As applied in the claim 1, Mitchell discloses edge cycles in the summary of invention which is equivalent to *thickness of objects*, but the examiner maintains that

object and dots are equivalent and therefore either can be converted from one to another.

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Toru by providing *thickness of dots*, as taught by Mitchell, for the purpose of detecting a collision.

Regarding claim 4, Toru discloses *depth information* (additional information coding, 103 in figure 1 and depth value in paragraph 13) *indicating a near side position of each dot on said two-dimensional image together with the data of said two-dimensional image. However Toru fails to disclose depth information indicating a far side position of each dot on said two-dimensional image.* However the examiner maintains that it was well known in the art to provide *depth information indicating a far side position of each dot on said two-dimensional image* as taught by Mitchell.

Mitchell discloses edge cycles in the summary of invention which includes *near and far side positions of the objects.* However the examiner maintains that object and dot are equivalent and therefore either can be converted from one to another.

Therefore it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Toru by providing *information indicating a far side position of each dot on said two-dimensional image*, as taught by Mitchell, for the purpose of detecting a collision.

Regarding claim 5, Toru and Mitchell discloses everything as applied above (see claim 1-4). Toru further discloses the providing method by transmitter (101) and receiver (105) in Figure 1, and also data structure in figure 5. The examiner maintains

that the method can be translated into a *broadcasting or communication or recording into a recording medium.*

Regarding claim 8, Toru discloses *means for generating data of a stereoscopic vision-use image* (Stereo image generation, 108 in Figure 1) *on the basis of data of a two-dimensional image* (2-D image Decoding in receiver in Figure 1) *and stereoscopic vision-use information* (additional information decoding, 107 in Figure 1). However Toru fails to disclose *means for composing an alternate image with said stereoscopic vision-use image on the basis of data of said alternate image, and a means for determining a collision between a displayed object on the stereoscopic vision-use image and a displayed object on said alternate image on the basis of* thickness *information of dots and an object on said two-dimensional image that are additional information of said two dimensional image.* However the examiner maintains that it was well known in the art to provide *means for composing an alternate image with said stereoscopic vision-use image on the basis of data of said alternate image, and means for determining a collision between a displayed object on the stereoscopic vision-use image and a displayed object on said alternate image on the basis of* thickness *information of dots and an object on said two-dimensional image that are additional information of said two dimensional image* as taught by Mitchell.

In the similar field of view, Mitchell discloses Edge Cycle Collision Detection in Graphics Environment. Specifically Mitchell discloses *a means for determining a collision* (Collision detection method in Figure 1-6, and from Column 5, line 35 to column 6, line 6, and Column 10 line 36 to 54) *between a displayed object on the stereoscopic*

vision-use image and a displayed object on said alternate image on the basis of thickness *information* (equivalent to edge cycles in the summary of invention because edge cycles have all the information about vertices of object and thickness can be calculated from them) *of dots and an object on said two-dimensional image that are additional information of said two dimensional image.* Mitchell further discloses VWE (the virtual world environment) in the background of invention and it is inherent function of VRE to *compose an alternate image with a stereoscopic vision-use image.*

Therefore it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Toru and Mitchell by specifically providing *means for composing an alternate image and means for determining a collision based on thickness*, as taught by Mitchell, for the purpose of collision detection.

Regarding claim 9, Toru discloses *means (*Stereo image generation, 108 in figure 1) *for generating data of a stereoscopic vision-use image on the basis of data of a two-dimensional image* (2-D image Decoding in the receiver in figure 1) *and depth information* (additional information decoding, 107 in figure1) *indicating a near side of an object on said two-dimensional image.* However Toru fails to disclose *a means for generating thickness information of the object on the basis of depth information indicating a far side position of said object and said depth information indicating the near side position of the object.* However the examine maintains that it is well known in the art to provide *means for generating thickness information of the object on the basis of depth information indicating a far side position of said object and said depth information indicating the near side position of the object.*

Specifically Mitchell discloses edge cycles in the summary of invention which includes both *near and far side of positions of the objects*. Therefore it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Toru by specifically providing *information indicating a near and far side position of the object on said two-dimensional image*, as taught by Mitchell, for the purpose of detecting a collision.

Regarding claim 10, Toru discloses *means for generating data of a stereoscopic vision-use image* (Stereo image generation, 108 in figure 1) *on the basis of data of a two-dimensional* image (2-D image Decoding in figure 1) *and depth information* (additional information, 107 in figure1) *indicating a near side position of each dot on said two-dimensional image.* However Toru fails to disclose *a means for generating thickness information of the object on the basis of depth information indicating a far side position of said each dot and said depth information indicating the near side position of said each dot.* However the examine maintains that it is well known in the art to provide *means for generating thickness information of the object on the basis of depth information indicating a far side position of said each dot and said depth information indicating the near side position of the said each dot.*

Mitchell discloses edge cycles in the summary of invention which includes both near and far side of positions of the objects which is equivalent information *of near and far side of positions of dots* in the image and the examiner maintains that either can be converted from one to another. Therefore it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Toru and Mitchell by providing

information indicating a near and far side position of each dot on said two-dimensional image, as taught by Mitchell, for the purpose of detecting a collision.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toru in view of Michell and further in view of Tomoaki (Japan Patent 2002-095018), hereafter referenced as Tomoaki.

Regarding claim 6, Toru and Mitchell disclose everything claimed as applied above (see claim 5). However Toru and Mitchell fail to disclose *providing at least one photographing time information out of focal distance information and field angle information, as additional information of said two-dimensional image together with the data of said two dimensional image.* However the examiner maintains that it was well known in the art to provide *at least one photographing time information out of focal distance information and field angle information, as additional information of said two-dimensional image together with the data of said two dimensional image* as taught by Tomoaki.

In the similar field of view Tomoaki discloses Image Display Controller, Image Display System and Method for Displaying Image Data. Specifically Tomoaki discloses the camera setting information (90 in figure 13d, paragraph 86) which is equivalent to *focal distance information and field angle information* and the stereo setting information (91 in figure 13d, paragraph 86) which is equivalent to *photographing time information.*

Therefore it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Toru and Mitchell by specifically providing camera setting

information and the stereo setting information as taught by Tomoaki, for the purpose of selection of two views out of multi-views.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HEE-YONG KIM whose telephone number is (571)270-3669. The examiner can normally be reached on Monday-Thursday,8:00am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Harold can be reached on 571-272-7519. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/HEE-YONG KIM/
Examiner, Art Unit 4192

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